

GREENBERG  
BELIZE  
1984

7530-00-222-3521  
FEDERAL SUPPLY SERVICE  
(GPO)

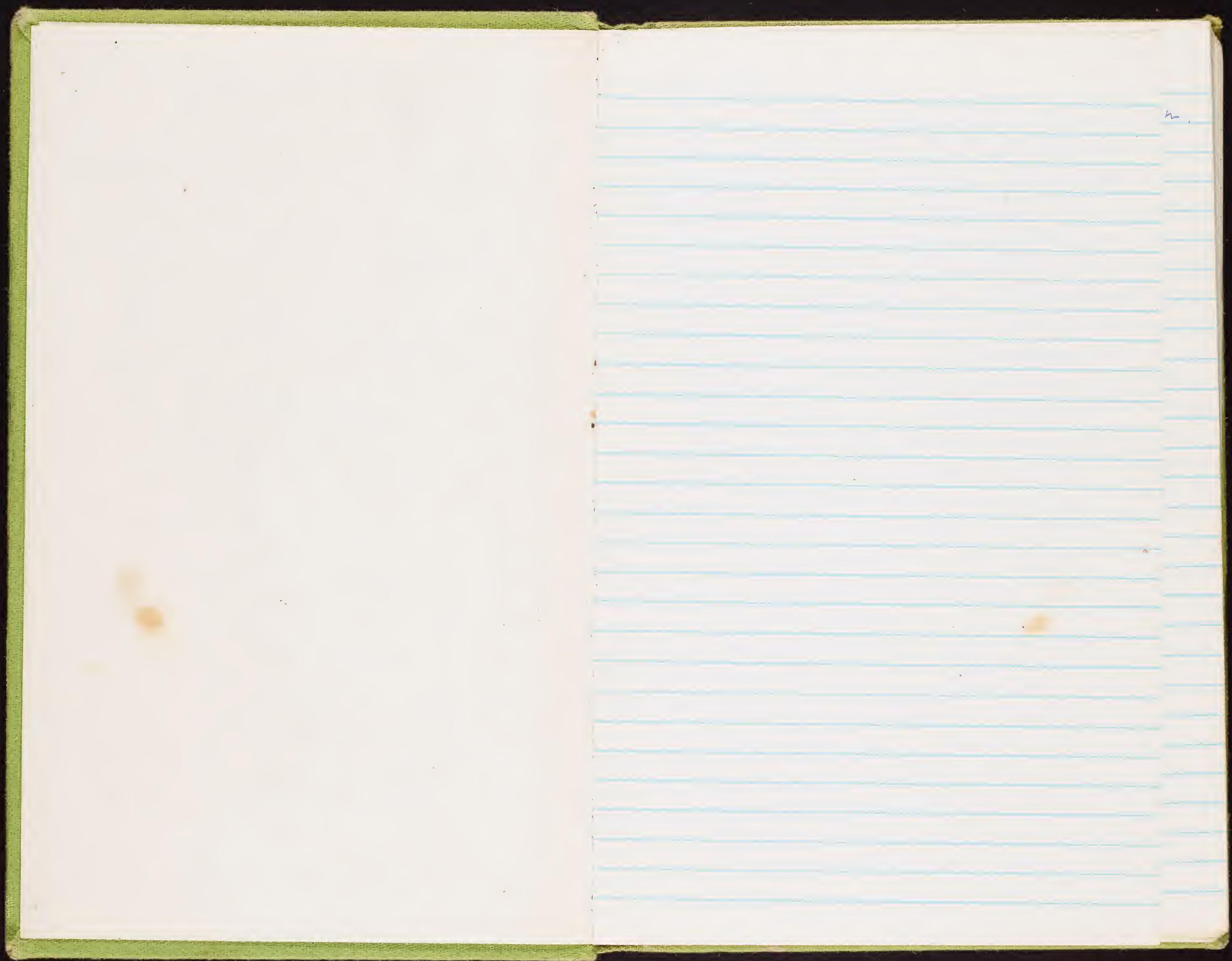
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20008



February 11.

I arrived at Dora Weyers place  $\approx$  1000m. after getting settled I headed towards the Shuben River which lies  $\approx$  1 1/2 miles E. The habitat around her house is "Pine Savannah" sparsely pines with grassland & areas of dense scrub around water. Apparently the Shuben River has a gully forest of low herbaceous & across the river on limestone hills (small) covered with forest.

The weather was dry - & the word is that it has rained a lot this "dry season" - I saw ~~Black~~ yellow-bellied sunbird, Tropical Mockingbird had Yellowthroat but saw little else. The trail I took led to a Orange Grove & then descended in swamp.

I went to mile 31 on the Western Highway & took a road E. to the Shuben River. It ended in swamp & I hiked S. along the river through brush & recently disturbed Riparian forest.

Cattle are being grazed + most  
of the remaining upland forest has  
had its undergrowth removed. Still, I  
saw quite a few birds: Ant Tanager, 1  
R. Fow, ~~the~~<sup>brown</sup> Sparrow, Chfr +  
Common - very wren-like - rattling Antbird  
around basic vine-tangles. 1 Yellow-bellied  
Cuckoo; ~~several~~ 10+ American Robins +  
6-7 Myiochanes + 2 ovenbirds

(unprovided all the migrants)

I checked a final road Mill 33

I went back to where a chick crossed the  
road that had a dense upland forest with  
busy Jst - As, + wv 3:00-5:00 IX  
Wd quite dark + I saw little. - I had  
a Waterthrush + saw 1-2 Redstarts

Dr. list:

Little Blue Heron

Little Egret

Turkey Vulture

W. Kite

Crane Hawk

Plain-chested

Bt. Bobolink

Solitary Snapper

J. Kingbird

J. Kiskadee

? Woodpecker

Dusky Antbird  
B. Antshrike

B. Antshrike

Brown Jay

B. b. ? Boat-tailed

Bt. Wwabler (2)

Myiochanes wabler 8

Yellowthroat 6+

Redstart 10-15

B. b. Tanager 4

T. L. Tanager 1

B. W. C. screech

Downy Antshrike

February 12 - Bel. 2

7:30-4:00 I spent in forest n  
the first 3 miles of the hummingbird highway  
I took several trails into the  
woods. The day started outucky-  
overcast - + drizzled a few minutes  
about noon - mid-day, was windy &  
the afternoon was lovely.

= Mile 3 I hiked N into  
woods on what looked like an old  
logging road - other trails weren't in  
it might have been the nith site  
for Minomet. The first few hours  
dense & heavily dominated by palms  
& saw ~~several~~ 3 Ant flocks  
flocks & 3 had wormers - 1  
My home - I needed follow + long.  
I sat down on all 3 worms -  
even in Tarsier flock they are  
very skidded & drop down or  
bult off away. Other members  
of Ant-flock include:

T.C. Grante (in 2 flocks), Bl W. warbler  
(all 4 flocks), Hooded warbler 3'  
Redstarts, W.B. woodcreeper  
S.H. woodcreeper, T.L. Mocking  
M. nuth. warbler

Bentbills, W.B. woodcrews  
Also seen in this forest:

4-O. Flycatcher

Mountain Woodpecker

L.B. Gachaman (hd)

Boreal Ant-shrike (hd)

Dusky Antbird (hd)

Kent of nubler (sound hd)

The next trail went from Mile 4 or 5  
south up a pass between two  
mountain hills. I saw 2  
Ant-tissue flocks - I had a wormer.  
It also had a CSW immature,  
47 vireo, Bl W. warbler, T.C. Grante,  
T.W. woodcreeper woodcreeper  
On this trail I saw 2 Ocellated  
Turkeys, 2 Greenlegs, a Little Heron &  
Lark & several more hunting warblers  
1 ♂ Hooded warbler.

The final one was 6 miles - I  
walked through dense palm  
forest to the top of a limestone  
hill. Here the forest was

most mature - 60' & open below  
(most of the rest has been  $\geq 40'$   
& scrubby)

I have found two flicks - in one I  
had numerous & the 2nd I  
briefly searched lower, 2 do.  
See T. m. woodpecker B. F  
Ant thrush.

#### Dry list

C. Flycatcher

Rocksides Hawk  
Hawk

Ocellated Turkey 2

Pearl

W. C. Swift 6

B. Hermit 4 (few)

V. Tanager 1

Tr. Woodpecker 6

W. B. Woodpecker 2 (pr)

Brown Woodpecker 1

S. H. Woodpecker 2 (pr)

R. B. Spinetail

Plain X-rayed 1

B. Ant thrush 3

D. Ant bird 1

Or Antshrike? 1 group

B. F. Antshrike 1

R. Martin several

W. C. Martin 1 ♀

Thick-billed Martin 2

M. Vireo 1 imm.

~~Vermillion Flycatcher~~

F. J. Flycatcher

B. B. Flycatcher 1 Ad

Social Flycatcher

D. G. Flycatcher 2 Ad

Y. B. or Andean Flycatcher 6

Lesser Flycatcher 3 Ad

L. T. Sparrow 2 prs

Y. Olive Flycatcher 1

N. Bunting 8

Y. B. Tanager 1 Ad?

G. B. Martin

Brown Jay

Green Jay 2

W. B. Whistler 20

Gray Catbird 2

Wood Thrush 2

C. B. Gnatcatcher? 1 Ad

W. Vireo 1  
 Y.T. Vireo 1  
 T.C. Grackle 8  
 Lesser Yellowthroat 12  
 Bronzovit 2  
 B.L. Wdthr 6  
 Worm-eating Wdthr 6  
 BT Green Wdthr 2 (♂ trach)  
 C.S. Wdthr 1  
~~Oakbird~~  
~~major of a Wdthr~~ 5  
~~N. Waterthrush~~  
 Veery Wdthr 10  
 Hooded Wdthr 3 (♂)  
 Redstart 8  
 M. Cruperalia 2  
 Grackle  
 Blue Darter 1 ♀  
 R.C. Antthr 3? ♂ group  
 R.T. Antthr 3? ♂ group  
 B. Flycatcher 4  
 ♂ Green-backed Flycatcher 4  
 B. B. Gnatcatcher 4

### Foliage Nut Survey

= 15 miles on Hennepin Rd - Z  
2nd growth forest 40' - dense  
understory

40

20

40

10 3mm spr 1b

50

50 4mm hang + twigs 1b

40

50

50

3mm green spr 1b  
4mm

50

50

50

50



February 13 Hummingbird Hiking  
Belize

8:00 - 400

I worked further out the highway today - beginning ~~at~~ beyond Branch 13 miles out.

Beyond this settlement is a dense area of cacao plantation, & also dense rainforest forest.

I began working in sun up dense low growth - I saw only Antbird, a few groups of Ant-tanagers (& P. xrops) - but the going was too rough - so I climbed a hill with more open forest across the highway. The first flock I ran into had: Ant-tanagers, Granteats, V.B. jacques, S.B. wren, Ph.W. wood wren, M. warbler & a few (got none). D. Antbird.

I continued along hill & saw BP between two Ant-tanagers (one I just saw), P.

I then saw a huge mist - Ant-tanagers, T.C. Granteat, spot-banded Wren, P.X., WBW, Two-billed Woodcreeper, Dark Anthbird, O.B. Exphorn M.W., Redstart, Brownishbler - R of road ~~LCW~~ Ph.W pr. Buntbill, Spurbill. I proceeded up road 2-2 m.s. I entered some low forest - very palm undergrowth & continued close to highway at first hill. I saw one flock & it was a mixed one took - Ant-tanagers, T.C. Granteat, P. Anthbird, Shrike-taner q? WEW, Redstart, G. Hooded warbler, Kentucky warbler, Granteat, S.B. wren, D. Anthbird.

I crossed live fence on the way to up.

I went 1 mi. further & bushwhacked in & over a mountain ridge - I encountered

a T.C. crested or w.t.L  
B+L, Mnrolu, Redstart & woodthrush +  
others (P+) but I couldn't  
follow it to be sure. + it  
didn't have a warmer - later

I saw a Ant-tanager group with  
a Summer Tanager (hd), Gratzn -  
& Redstart - but no warms.

I went back to a trail at  
Mile 5 which went up small  
hill - I saw a flock 40' in  
a very dense vine tangle with  
Coturnix, WEW, 3 Browns  
& Ant-tanagers in a few trees but -  
I got break-up of date on  
this very hot warmer as it  
was most unskiddish compared  
to others I've seen here.

Distinctive	WEW	4
Great Tinamou (hd)	Morillo	4
T. Vulture	BTG	1 hd
Rockside Hawk	Ovenbird	P?
WTk. L.	Kirtz's Warbler	8
Mealy Parrot	Hooded Warbler	8-10
Spoonbill	(2♂ + 1♀)	seen
Anis - g.	♀ wsg	dull
T. W. Woodwren 1		
olivaceous Woodwren 1?		
I. B. Woodcreeper 6	Melodious Bulbul	
WBW 2	O. B. Egret 2	
Plain Vireo 1	♂ Summer Tanager	
Dusky Antbird 4	O. B. Sparrow	
PLAW 2♂		
Bntb. II 3-4		
Brown-throated Flycatcher		
Liz Flycatcher		
Or. Flycatcher		
Brown J. +		
Spotted-browed Oriole		
Grosbeak		
Tropical Manakin		
L. B. Gnatcatcher		
Green Shrikebird 10		
T. C. Crested		
L. Greenlet		

Feb. 14

Flsh L Zupp Anttoser  
PX

? - couldnt find  
it and wrote

3.10. I

Hornb III  
Kathy I  
BzW II  
Robert II  
MW II

S.L. Flsh - Zupp Anttoser

DzW

BBrubdum

T.C. Grante

Rosine

I.B. Woodcreeper

S.B. Wren

W.B. Woodcreeper

PX

Spoonbill

Bantbill

WGW

MW

Btwn

February 14 - Hummingbird Hwy -

I was very bad, I was tired & I forgot to write field notes for this part of day & I only vaguely remember what I did - (early parts of the road) - Important: ♀ more ♂ Hwabw) in forest + 1 ♂

Crown island growth

DL AL - common

& collab to each other

Olivaceous woodcreeper?

N, W & Only one warmer.

Collected Dead leaves

Dry forest (more or less)

Violaceous Tanager

Acacia

C. C. Woodpecker

TL woodcreeper

Olivaceous woodcreeper 2

WBW

LB woodcreeper 8

Py

Pn A/W 3+pr

P Antbird 2

Defly

Empidonax sp

Spurbill 2

M. Brnbill 4

B Jay

S. B. wren 6+pr

W. B. woodcreeper 6+pr

Lifbird

G. Ju. vireo

T. C. Gnatcatcher 4pr

L. Gnatcatcher common

NW 8

Btbw 2

BBM Colw 1

KW 5

Hooded warbler 8

Yellowthroat 2

WEW 1

Ant thrush 15

~~OB. Sparrow~~

Dead Leaves 5m: up (hummocky)

Feb 14 pm Partly cloudy overcast

6	6	10	
11/2	4	3	
3	4	3	
4	4	3	
(2)	4	4	
6	6	4	
8	12	4	
8	8	4	
6	8	4	
4	8	2	
2	8	7	
9	5	3	
6	4	6	
7	7	3	
13	3	2	
9	4	1	
3	3	3	
9	4	3	
13	4	3	

(not) 2 cm cracked  
4 mm scab  
4 mm - or  
3 mm crack  
1 mm thick  
3 mm crack  
1 mm thick  
8 mm thick  
2. 1 mm thin red-wire  
1 mm thick  
6 mm spqr - wire  
could be scrapin  
2 mm spqr  
1 mm wire  
8 in 1/4 in  
8/4

Página 5

## Simple L

Feb 15

Plant 1 - ~~Butt~~ R.C. Ant to see  
Liberator?  
B- Flycatcher  
Ruddy Woodpecker  
Y.B. Cuckoo  
PX  
Butebill

Plant 2 R.C. Ant to see  
DwDW  
PX  
WBW  
TB Woodpecker  
SR Flycatcher  
Magnolia Warbler  
W.D. Woodcreeper

Plant 3 2 Ants vs  
Fol., Glare

Plant #1 2 Ants vs MW  
Y.B. Cuckoo  
S. B.Wren  
T.C. Gnatcatcher  
D.W.W?

### Hummingbird Highway

830 - 445

I first went way out the  
highway to Mile 7 or so  
I bushwhacked up a small  
Keweenaw valley up a very scrubby  
ridge top - the valley slope had  
relatively open forest. I felt  
awful all day - it was overcast  
& rained a bit in the morning  
but cleared up by noon.

The thick & saw are on the  
previous page - ~~had~~ needless to say -  
I saw no worms in them -  
or at all today.

I went further out the road to  
Hickey's Cacao plantation & beyond;  
but mostly it is clear air  
the road - I turned to mile  
15 area to do a lot more  
& saw plenty, as well.

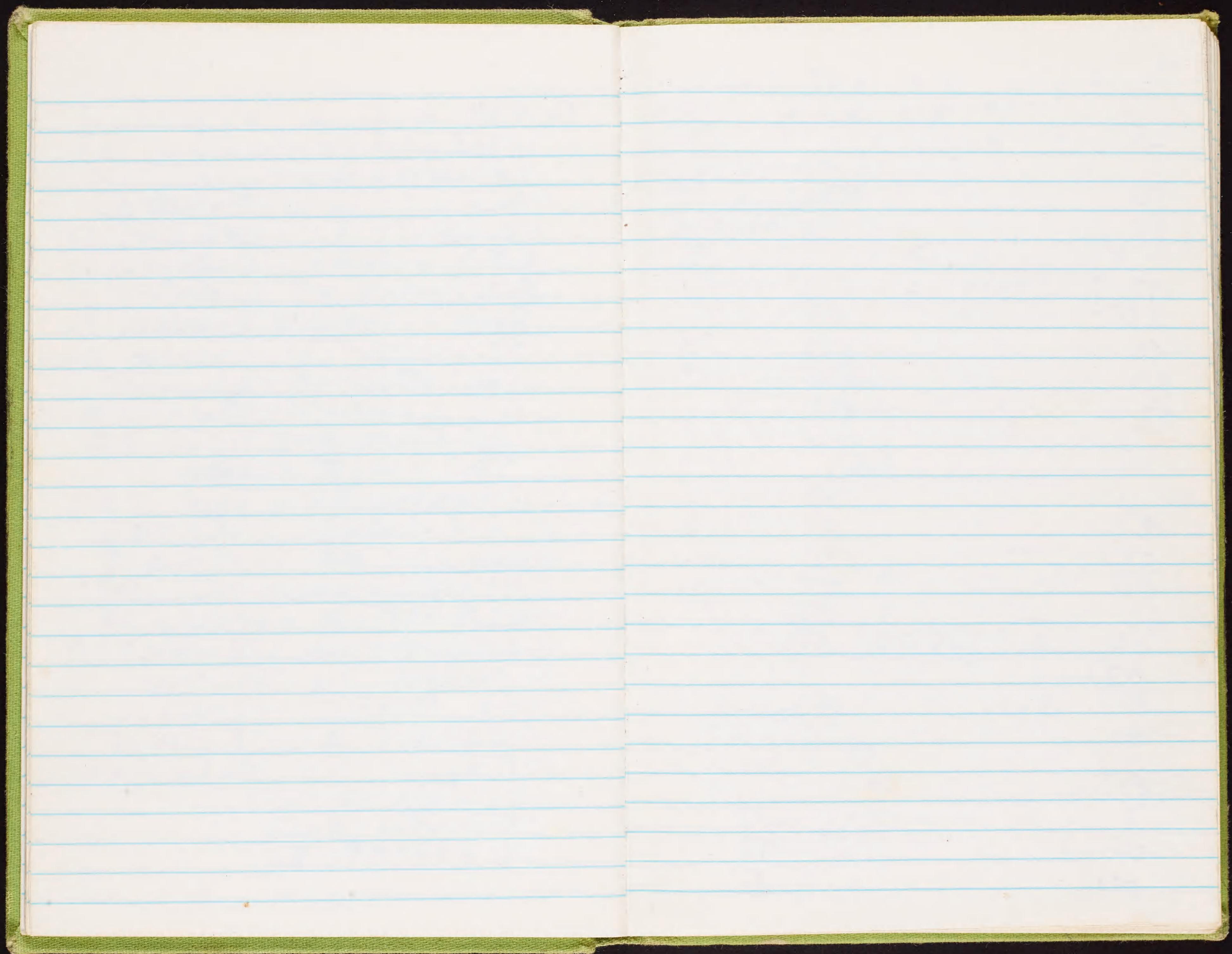
I got more observations on  
sp. & banded worms - they  
are very much like CTALW.

I went up a 2nd growth track  
 (old jeep trail? - old logging road)  
 for (~) mi - saw little life  
 was hot 2-4pm - but I  
 saw a pair of Jacamars  
 & an Attila with a huge frog  
 pretty lit - frog was 1.5x  
 head length of attila & round.

Attila joined a b.t. Also Citoline  
 Toco lot's of Common Thrush  
 Hummer A ♀ Hooded warbler  
 2 Myiozetetes & Redstart

I stopped one final spot  
 at Mile 3 on right - a track  
 that ended quickly in a ravine -  
 I saw 200 blocks - one  
 Ant thrush group alone (?) +  
 A-tit, T. (Gnatlet), I.B. woodcreeper.  
 (NWAW lit)

	Day 1, Ht:	
W.C. Peanuts?		
S. Cuckoo	2	
Ants		bry. Antbird
C. Tropic	1	LB. Grackle hd
S.T. Tropic (hd)	1	G. Shrikehd hd
R.T. Jacamar pr.		WEVERCO 1
Ruddy woodpecker	1	T. (Gnatlet) 3 pr
T.W. woodpecker	1	L. Gnatlet (imm)
WB woodpecker	2	S. Shrikepr
I.B. Woodcreeper	4	MW 8
B.T. foliivore	2	BT 6 2
Px	2	<del>CSBD</del>
B. Antshle	2hd	KW 4
Rufy Antbird	1	H.W. 2 ♀
DWAW	3pb	(C. in scrub)
BR Attila	1	
BB Phoebe	hd	QB (juv) 4
D.C. Phoebe	hd	B. Ondole 1 ♂
Empidonax	3-4	Y.W.T-W
S.R. Flicker	1	R+Antl
N. Buntbill	2	R(Anttiger)
B. Jay		Orchid. Sparrow
Green Jay	3	
S.B. wrent	6@ pr	
L.B. Wren	4 pr	



~~Frontiers 2/18 11<sup>th</sup> clear  
Laramie forest undergrowth~~

2011-12 M.LC 17 Hummingbird Highway

56  
82  
60 1 mm green spider 1P  
58 3 mm spider 1b  
50  
50  
50  
50 50 50  
50 50 50  
50 50

A hand-drawn diagram on lined paper. The central vertical axis has several horizontal lines extending from it. On the left side, there are two large ovals at the top, each containing a '50'. Below these are four more '50's arranged vertically. To the right of the central axis, there are three large ovals at the top, each containing a '50'. Below these are four more '50's arranged vertically. In the middle section, there are two ovals, each containing a '3mn spirograph'. At the bottom center, there is a large oval containing a '2000' with an arrow pointing to it. To the left of the central axis, there is a label 'fig 11.'.

Diagram illustrating a 5x5 grid of numbers:

- The first four columns are labeled "50".
- The fifth column is labeled "500".
- A bracket under the first four columns is labeled "2 rows with 3 in length".
- A bracket under the fifth column is labeled "1 row with 5 in length".

Feb 16

Flock #1

DWAL	PX
RLAT	Russet Antbird
TCGnat	S. Wren
L. Vireo	
I. Woodwren	
WBW	

Flock #2

Tow. Antshrs	Y. Blaueye
I. Gnatlet	
I. D. woodwren	
S. Wren	
BW	
MW	
WEW	

Flock #3	2 Antshrs
	Spidebill
	I. D. woodwren
	S. Wren
	WEW (Ld)

Flock #4	2 Antshrs
	DWAL

I. Gnatlet
------------

Flock #5 - RTAT
Hooded Warbler
W. Vireo
I. B. Wren

S. Wren	I. B. Wren
P. Antbird	
Blue-winged Warbler	
Btwh	
(Hooded ♀)	MW

February 16

I worked the early part of the Hummingbird Highway.

I saw 3 + hd & 4th year - all in mixed species flocks.

I got good data on the 3

The previous page has the composition > + 5 well

covered mixed flock - I

switched flock by the tiny-billed woodwren + they appear to do a lot of palm leaf foraging.

DWAL + TCGnatlet + S. Wren are also fed regularly.

The last two flocks were in the mile 3 area - where I went the first day - but d. (first) flocks - the birds were 2+ years 2nd growth near the road.

Dry forest -  
W.C Parrot ?

L. Flycatcher

R. Thrasher

Citronelle Tanager

2

T.W Woodpecker

1

Rufous woodpecker

1 (at ground)

2 B woodpecker

8-10

L.BW

1 pr

B. Antthrush

2 hd

Rufous Antthrush

1

Pn AW

5 pc

Dark Antbird

2 pc

W.C Mockin

hq

M. Titana

B. Flycatcher

pc Flycatcher

Empidom

Binibill

2-3

Spadebill

2-3

Brown Jay

Green Jay

L.B W. wren

White bellied wren

1 pc

Gray Catbird

2 pc

T. Catbird

5-6 hd

L. B Catbird

1 pr

T.L. Catbird

4 pr

L. Greenlet

10+1

B. Th-Warbler

3

Bleeding warbler

1

WEW

4

M. Yellow Warbler

10-15

TLW

6-8

Hooded Warbler

4 more ♂ + 1 ♀

in forest in scrub  
+ 4 hd

Redstart 6

Y. Bluejace 4

R.J. Altijay 7 groups

R.C. Antthr 6 groups

C. B. Sparrow 4

Pied Loaves Humboldt Abney

#3 Young Larchwood forest

2"	8	(2.5 cm x 4 mm)
5"	10 cc	Caterpillar
5"	3	9 mm "bug"
5"	7	6 mm cater
5"	4	4 mm cater
	5	6 mm cater
8	3	6 mm spider
		1 mm black dotter
3	3	
2	3	
2	3	
8	3	
10	2	
3	1	
4	1	
3	1	
8"	100	
5"	2	
2"	2	

= 5/4

10 cc

#4	3	2.5 cm caterlet
9	3	1 mm rock
3	2	1 mm rock
3	6	4 mm spider
4	9	5 mm spider
5	3	1 mm fat spider
4	4	Zemsking bug
4	4	3 mm spide
4	10	1.5 cm rock
4	5	1.2 cm rock
5	5	1 mm rock
3	3	3 mm spider
8	6	8 mm caterlet
8	6	1 mm caterlet
3	6	5 mm rock
3	5	3 mm rock
4	4	4 mm rock
3	5	1 mm high black rock
3	3	
10 cc/c		

7/9

5#

8 c.c.s

8	4	3	
4	5	3	
3	8	3	
5	4	4	
5	6	8	
4	6	9	
8	7	7	
6	10	7	
8	9	5	
6	5	2	
6	3	3	
8	4	3	
6	4	3	
8	4	3	
6	4	3	
8	4	3	
6	3	3	
7	4	3	
5	4	3	
	5	5	
	4	4	
	5	5	
	4	4	

Gomphidae

Gomphidae

Gomphidae

Ischnocnemidae

1. Tomocachet

2. 3 mm gray

3 mm gray

4 mm sp. ab

3 mm rock

10/6

Foliage insect survey Mile 3

Hummingbird Huhay

February 13

50

50

50

50

60

50

50

50

50

50

50

50

50

50

50

50

50

50

50

50

50

50

50

50

50

50

50

50

(3 mm sp. ab)

(3 mm sp. ab)

50 50 50 50 50

3mm φ14/16

4000

५८

*Ulmus sp. L 1 b*

50

50  
51

50

50 ~~large leopard bat~~  
~~U. r. rufus~~  
~~3 mm n w 1b~~

50

50

Jahr ge sperrt

7/0

Feb 17

check Mile 2 area of thorn

Fishy 1230-1330

Saw the following flocks:

RTAT

RTAT

TC Greenlet

TBW

WB Woodpecker

W. Bon. Warbler

WEW

{ RTAT

{ Bon. Warbler ♀

Other

And in antwarm, T. W. Woodpecker

Birded Woodpecker

GH Tanager

Catbird

RT Anttanager

TD warbler

I stayed in grassland scrub with  
1/2 - 1 1/2 ft. of road.

I also did insect census

No cool point in only a day 1/2

Feb 18 Belize

I drove down the Southern Highway - which is a dirt track through pine forest most of the way. I went to Puerto Gordo to find Chito Wright so he could send me to first around San Antonio.

He suggest that first I go to Blue Creek which is 8 m<sup>2</sup> up a turnoff from the road to S. Antonio. The creek around

B. Creek has some scrubby forest & lower timber has been cutting along

the creek. I parked around

some old growth near the village that was heavily infested with pig tracks (I even saw 2 pigs) - I saw Little-  
one Anttiger - T. brevirostris flock with  
I. B. Woodcreeper & B.H. Swiftlet,  
Redstart, warbler, M. Warbler in  
area. Lots of G.B. Sparrows

I walked up Blue Creek a ways  
& through the forest w/

beautiful along the river - I  
saw sun birds (L. brevirostris) & lots  
of flycatchers & Redstarts

Feb 19 San Antonio - Terrible

- 4rd. tiers
- rain &  
overcast

trail  
taken in morning

Flock 11: R.G. Anttger  
R.C. Anttgr  
T. brecht  
Sepia capped flycatcher  
IB woodchuck & house finches  
& vines

← 1. sec!

Y. Blue jay  
Brown w. blwr  
W. woodchuck  
W. W. W.

Flock 12: R.G. Anttger  
R.C. Anttgr  
IB woodchuck  
W. W. W.  
W. woodchuck  
W. W. W.  
Also noted: ~~3-4~~ kW bank of  
elected firs. Hoisted myself up  
to about 1 MW. Found some  
2-3 Robins, a small flock  
of birds, a few Grackles, many  
small birds, and a single (1) Vireo.

Today I took the ~~trap~~ fence to the  
San Jose in search for forest.  
The road winds & thresh thickly with it &  
scattered trees, and for several miles, all  
the way a m. l. t. box - except the fence.  
First found the old scrubland, which  
the road went through, across a gap  
a mile or so south of the fence above.  
Notes: 1st we saw a rooster pheasant  
at the end of the road, and

I continued on the road, and  
for my mother & white I stopped  
in forest near the old scrubland -  
the red was just about finished.

I found a track that headed west towards Union. I was told I hike for over an hr towards flooded hills - but it didn't look like the road got particularly close to forest. ~~for 3 hr~~

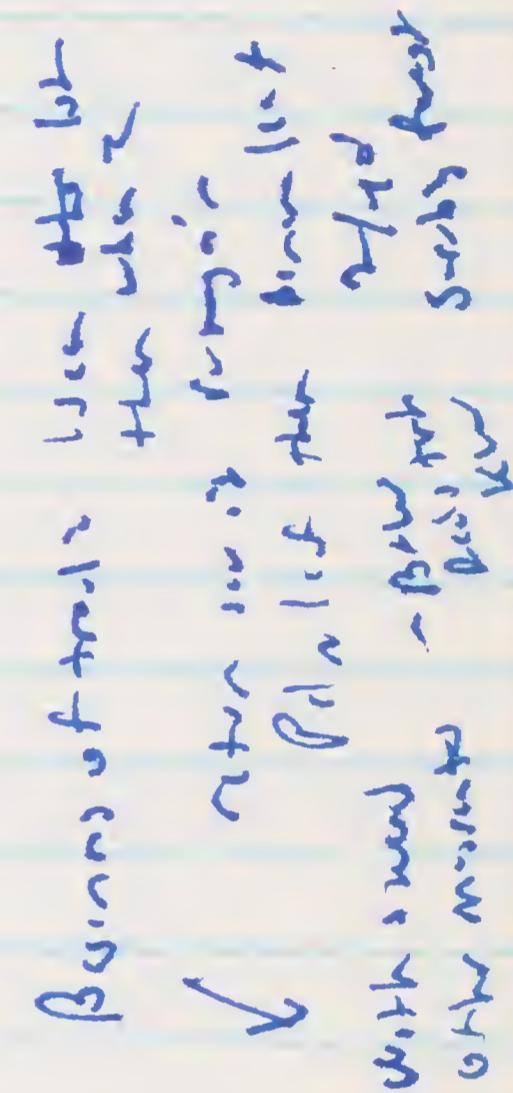
Acorn woodpecker, BH Scrubjays, T.B. seed finch, W.C. scrubjays, Zdys, D-v-tits (many), J. Tigris, (2) Yellow-throats, MW (6-8" in scrub veg.), KW (1), Empidonax, Yellow-bellied Redstart (several).

I returned to camp beyond the Military camp & from 1200-400 I walked up a trail towards N.E. + skirted woodland 1/2 m. then turned abruptly into forest. Practically the first bird I saw was a W.W. + I saw 2 more on the hike. By now the sky was clarity. The trail starts out as a road + across it goes through undisturbed forest I think.

except that it is along a ridge + has numerous blowdowns.

### Ridge AT

Re. warbler  
L. Greenlet  
T.B. W  
E.R. Pewee  
G.W. Wbbl  
Lance  
Redstart  
Husky S  
Brewer's  
L. Thr  
OB Flycatcher  
PY



WE undate Chiroptera on the  
hills on Cr. Int 5 sec c  
held on to 1" PCL

6' 1/40 in 3' 10" on grass + dead  
Palm trees (2-3)

No others,  
Few plantain pink + probably other  
fruits

1 peck at the vine

(Grass)

Feb 20

Block 1 Flat top: TW Woodpecker BT Flock  
TL Gnatcatcher SP Flycatcher LBJ Woodpecker  
LBV WEW Etowah  
PY GC Webber Rutherford  
ML KW

Block 2 Sparrow small  
G.C. Webber  
TW Woodpecker

7-11-20

Works

KW = 5

HW = 3 (?)

Rutherford = 8

MLW = 4

BHW = 4

Ombud = 3

WEW = 4

Tanacee = 1

GW = 1

8

On Ave

SP Flycatcher  
Antthrush  
BT FB

WB Woodpecker  
WEW (?)  
Cuckoo

9

RCAT

TL Gnat  
Barred ~~Woodpecker~~  
Lanius  
WBW  
SLP  
RTF

4 Antthrush

TW Woodpecker

WEW

WB Woodpecker

TL Gnatcatcher

SP Flycatcher

FW

10

RAV

LB Warbler

Linc Polye February 20

Trail up Mtn from Rd  
to San Jose - Forest

Sunny & Warm

50 small (5mm Fragminis spid.)

50

50

50

(3mm & herb  
4mm reticulated)

50

(3mm & smooth  
4mm " " 1#)

50

50

50

50

50

50

50

60

50

50 1m tall & well

50

50

50 1m or less 1#

50 4mm spid 1#

50

5  
say

50

50

50

50

50

(1m see prior 1#)

1300

300

200  
100  
100  
100  
100  
100

2000

100  
100  
100  
100  
100  
100

(5mm sp urib)

(3mm hump nymph lb)

100  
100  
100  
100

100  
200

60

50

40

30

20

10

50

40

30

20

10

80

70

60

50

40

30

(1mm sp urib)

(2mm 2-mp)lb

(3mm hump nymph lb)

(2cm - springtail) ?

(6mm hump lb)

3300

SD  
SD  
SD  
SD

SD (4mm spifit)

SD  
SD  
SD

SD  
SD  
SD

SD

SD  
SD  
SD  
SD

SD  
SD

SD

SD

(3mm hanging 1)

SD

SD

SD

4300

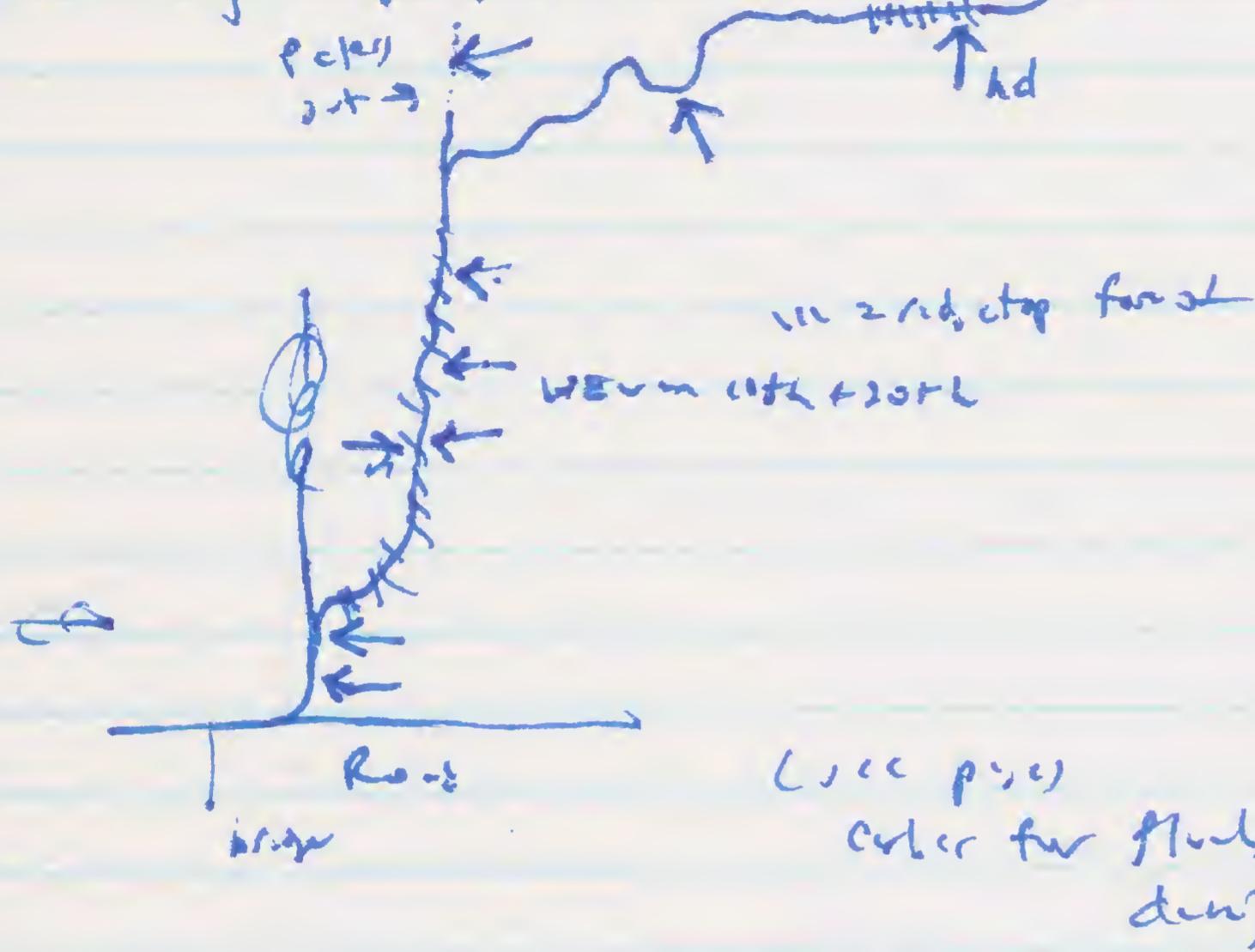
SD

(1.2cm height)

= 22(4)

February 20 San Antonio Belize

I worked out some trail to  
yesterday - going much further



The trail divided from the ridgeline into  
partial mature forest with patches  
of being palms? understory. This is  
over a surface stream.

The ~~ridgeline~~ forest has lots of  
PhAW, bracelet, Antbirds, TC Greenlet  
with a few ps of G.C. warblers  
Ruby Antbirds -

Common migrants include KW, NW  
BZLW + Redstart LZW MW

With some BT6 (2),  
Wilson's (1), Humbird (3-4)

IN but 2 of the BT6  
were clearly in NSP + one was  
"cy with Brn Warbler  
+ the one at trail long ago  
near some other migrants but  
not filling any flock

Since we saw far common birds  
I am getting insect data now.  
(See previous for last best  
answ).

Tall Apparently goes to "Esperanza"  
followed heavily by banana stems  
San Antonio

## Combined List

2/11 - 2/20

W/Hawk (Chd)

Pileated Woodpecker

G. &amp; P. Poec. 1

R. Qu. Y. Poec 2

S. B. Poec (Chd)

WC Parrot 6

Screech 3-4

LT Hummer May

L. &amp; H. Hummer

L. B. Emerald 3-4

P. C. Flycatcher 1

R. T. Hummer 6 May

ST Trogon 14

B. C. Motmot 2

RT Jacamar 2

Wh P-LP bird 1

HB Tanager 10

B. C. Woodpecker 1

T. Woodcreeper 6

WB W 6

Barred Vireo 3-4

TB W 10

Barred Antshrike

## TB Aug 2-3

DWAW	8-10 prs	G. Shrike Wre
Poly Antbird	10	Y. T. Vireo
R. C. Martin	10	T. C. Greenlet
WC Martin	10	L. Greenlet
Thr-shrike Martin	3	Berry-quit
BR Atilla	6+	B. Thrush
R. Murred	2	WEW
C. Biscard	1	G. Wrybill
MT. Tyrq		FW
G. Kingbird		YW
G. C. Flycatcher	2	MW
D. Flycatcher		BTG
E. Flycatcher		COW
WT Sparrow	4	W. vireo
E. R. Flycatcher	3	KW
N. Bick-bill	6	(Yellowthroat B. Warbler) 20 (383 m)
RTF	3	WW
U. B. Flycatcher	5	A. Rust. 20
L. Capped Flycatcher	2	G. Crand. Wre 6
B. Jay		M. Richborg
B. B. Wren	4 obs Jr.	Baltimore Oriole 1
S. B. Wren	3	B. C. Oriole 2
W. B. woodwren	8-10 prs	O. b. Euphona 1
G. Catbird	2	S. R. TWR 5
T. Gnatcatcher	6	BL TWR
W. B. Gnatcatcher	3-4	

Feb 20

S. T. J. S. r. v. 100% w. b. w. f.  
R. L. Antler ♂ 21 b. w. f. w. b. w. f.  
R + Antler ♂ 21 b. w. f. w. b. w. f.  
B + Shrike ♂ 21 b. w. f. w. b. w. f.  
B + B. Antler ♂ 21 b. w. f. w. b. w. f.  
D. Broad breasted ♂ 21 b. w. f.  
Q. Indigo bunting ♀ 21 b. w. f.  
W. scoter ♂ 1 b. w. f.  
I. R. B. (rufous) ♂ 21 b. w. f.  
C. B. sparrow ♂ 21 b. w. f.  
W. B. sparrow ♂ 21 b. w. f.  
T. L. ♂ 21 b. w. f.  
G. Antler ♂ 21 b. w. f.  
A. Antler ♂ 21 b. w. f.  
Antler ♂ 21 b. w. f.  
C. W. ♂ 21 b. w. f.  
C. Antler ♂ 21 b. w. f.  
A. Vireo ♂ 21 b. w. f.  
B. Antler ♂ 21 b. w. f.  
I. G. ♂ 21 b. w. f.  
S. ♂ 21 b. w. f.  
I. Antler ♂ 21 b. w. f.  
B. Antler ♂ 21 b. w. f.  
W. Antler ♂ 21 b. w. f.

Feb 21

Fluk 1 }

{ on tape had new

Fluk 2

Fluk 3

- L. brent, B+LW, PX  
woodlark sp. S.R PL.  
ER Fluk. II B+LW

Fluk 4 + simple & fluk ♀ quickly

Antler ♂ Russet Antler

Lanio (Inland)

Broad breasted

Ibstock

Thrushes

✓ snipe <sup>clown</sup>

PX

T. C. brent

LBrent

DHAL

DR flycatcher

Flock 5 TC Greene

Dwzv

NEW

IBwood

PX

SR Flyer

♂ DWAV

Gentle

S. L. Fly.

RT Attyr

TC Gnatlet

WBW

Pluck 6 Dwzv

L Gnatlet

GW S.C. Flye

BWV S.R. Flye

LB Gnatlet pr

♀ Dwzv

L Gnatlet

TC Greene

BT6 Wabler

S. Br. wip. w

S. Breast Wader

PY

Pluck 7 Dwzv (ally to RGT strip)

L Gnatlet

CW mn ( this is - a old ♂-r

others fine bcn 30-40'

in plar vj - 5-7"

leaf tree

other mud base

branches long turned

soil h on BCT

♂ DW

L Gnatlet

TC Gnatlet

RT AT

BWV (2!)

PY

Spadebill

SR Flycatcher

SBwcr

BT6 Wabler

TC Gnatlet 2d

Feb 21

730-430

I worked up the same trail  
to Espresso - but I walked  
briskly on first part & worked slowly  
on & went further in lowland areas.

¶ I saw or had 4 W.W. I  
must say I was sick today (stomach  
(emp) & from 200-430 I  
collected dead leaves. Plant composition  
is on previous page. The total  
day list is as follows:

Slaty-breasted Tinman - a l. for!  
Great Black Hawk ← Cattle Egret  
Aztec Parakeet

Blue parrot

W.B. Emerald

P.C. Fairy

R.T. Hummer

L.T. Hummer

L. Little Hermit

S. T. Tropic

N. B. Tropic

C. Racers

Smokey-brown Woodpecker

The woodpecker

Ruddy Woodpecker

WBW

Banded Woodcreeper

T. Woodcreeper

Plain Xenops

S. T. L. Flycatcher

B. Antshrike

Rufous Antshrike

Plumbeous Antshrike

Dot-winged Antshrike

D. Antbird

Y. Flycatcher

R. Mockingbird

W.C. Mockingbird

T-L Mockingbird

B. R. Antlila

M. T. Tyra

Dusky-capped Flycatcher

RTF

S. R. Flycatcher

WT sparrow, II

E. L. Th. bill

N. Bentbill

Greenish Elencu

G. B. Thrush-like

~~Sc. Flycatcher~~

O. B. Flycatcher

B. Jay

B-b. wren

S. B. wren

W. B. Woodwren

Gr. Titler

Brachyrhynchos

Gr. Thrasher

T.C. Greater

L. Vireo

B. Flycatcher

W. EL

Blue-winged Warbler

Red-w. Warbler

Yellow Warbler

MW

BTG

CWW

W. Thrush

Gr. bird

A. Warbler

Y. B. Chat

A. Rabbit

G. C. Warbler

C. h. vireo

Giant warbird

RT Ant-tanager

Dead Leaves collected on Espruce Trail

RCA 10

Lcn 10

B. H. Litter

B. & Gwobish

B. b. Lwobish

Espruce:

2cm cricket 1.5 cm, 1 cm

large moth

small moth

Black beetle

?

Single Rose

1cm cricket

1cm cricket

3mm cricket

1.5 cm flat Hemipter

1.5 mm insect

1.2 cm katydid

1cm Elaterid

3mm weevil

Sample 2 - Forest <sup>low</sup>

3mn wall

3mn rock

3mn depth

3m vertical

2cm silver fish  
shells

3mn rock

- 2cm kelp bed
- 1.8 cm rock
- 1cm kelp bed
- 1.5 cm kelp bed
- 3mn kelp bed
- 6mn growth
- 2.5 cm kelp bed
- 3m spic.
- 1.2 cm kelp bed
- 2cm kelp bed
- 2cm kelp bed
- 2cm kelp bed
- 4mn rock
- 6mn rock

18/13

8	8	+	6	38	12
5	6	7	8	5	7
8	+	8	6	4	8
5	4	8	8	5	12
2	palm leaf	6	6	5	3
		3	6	3	7

low rock

3mn rock

3mn orange rocky

1.2 cm flat crustose

3mn spic.

1cm scrub (soft)

2cm kelp

6mn crustose

1.2 cm rock

1.2 cm surface

1cm striped rocky

3mn rock

2mf tyroid algae

3mn rock

3mn rock

4mn rock

1.2 cm kelp

8mn th. - Elektrik

1cm kelp

3mn kelp

3m rock

4mn rock

3mn rock

6mn rock

3mn rock

5mn rock

3mn rock

3mn rock

6	6	8	8	6
4	5	8	8	4
4	6	8	8	5
5	7	8	8	6
3	6	8	8	5
8	7	8	8	0

18/7

RCAnttenger

B. + Shultz-tenger

B. + Seltzer

B. F Grubbeck

Espuma  
Sample 4

Ridge Possible escape due to hole

5 3  
6 3  
7 7  
8 6  
9 4  
T 12  
6 8  
7 4  
8 6  
9 6  
10 6  
11 8  
12 8

6m rock  
7m rock  
6m mud

7mm rock  
2mm rock  
Brash ice  
Snow pack  
7mm sand  
Ice covered  
" "

Ammerkohle  
Ammerkohle  
Snow pack  
7mm rock  
7mm rock  
7mm mud  
6m mud  
7mm rock  
7mm rock  
7mm rock  
7mm sand  
2mm rock  
2mm rock

17/6

Esperanza-

Sample 5  
Notchop purple 1600

3mm spic

1.5 cm thick dol

6 mm new hoppers

1.5 cm thick dol (flat)

1.2 cm rough

1.5 cm rock

3 cm black Pedotextured with  
red spots!

1.2 cm rock

6 mm dol

1.5 cm thick dol

8 mm thick dol

5 mm rock

1cm round, black boulders

1mm dol

1mm rock

Big black boulders

5 mm mottled

(1.2 cm round)	, 10	10
(4 mm)	10	2
(4 mm)	6	5
(3 mm)	9	6
(3 mm)	4	4
(3 mm)	5	2
(3 mm) pink	3	4
(6 mm spic)	3	5
(5 mm dol)	3	6
Kinwaga boulders	8	3
	6	3
	7	4
	6	8
	5	5



Feb 23 - Blue Hole  
Dead leaves Sample #1

6 3 6  
16 4 6  
3 6 8  
6 10 8 cm  
4 4 5  
3 6 6  
12 9 6  
5 3 3  
8 3 3  
8-cm, 3  
9 5 8  
11 6 8  
10 6 5

1. Somewhat  
Bonesaw  
2.5 cm x 1cm  
grb  
3 mm sp. v.  
Tin mouth  
Tin mouth  
Tin mouth

3 mm back  
1.2 cm sub  
Bonesaw  
8 mm 60 cm  
3 mm sp. v.  
Tin mouth  
6 mm sp. v.  
12/8

Sample 2

8	3	3
10	4	3
6	3	4
12	3	4
14	3	0
8	6	6
6	6	6
6	8	8
6	8	8
6	8	8
20	3	3
8	3	3
8	3	2
12	4	4

(Fim + spiro)  
(6 mm spiro)  
(4 mm spiro)  
(5 mm spiro)  
(6 mm root)  
(7 mm)  
(6 mm + 2)  
(6 mm root)  
(3 mm bath)  
(3 mm spiro)  
(3 mm spiro)

9/4

At 15: Comm. pulse

10° pul-

Feb 23 11 - 330

I walked the Blue Hole  
Region of the Hummingbird  
Highway. I did my first  
insect census + checked where  
5 Antagon plots - of which  
2 had new on which I  
got data.

February 24

I returned once again to the Hummer Hwy - where I spent only a few hours. In general it was a gloriously clear day - ideal for one final day's field work.

I saw or had 5 worm-eating flycatchers - on two occasions. A trail ~ 5 mi up road + the "Firetrap" trail about 5 miles up Rd.

The first two were having an aggressive interaction which we suspected they an intense version of the "bunt chaps" - I saw gaping + chasing as well. I set focus date on on of the birds (both were in a Antthrush flock)

I saw a 3rd alone in palm forest (Khuwe area)

& had another in another section of palm forest.

Along the 2nd trail I saw WECW #5 in Antthrush flock - I got date on it #28 for Belize - I quit & took afternoon off

Bird List 23 + 24 + L.

Great Tanager by

Gray Hawk

T. Vulture

R. Quail Dove

WT. Quail Dove

Yellow-headed Parrot

Purple

R.T. Hum

LT. Hum

Little Hum

6, B. Myio

W.C. Swift

KB Tanager

Acajou Woodpecker

Th. Woodpecker

Chimney Woodpecker

WBW

FBW

Fx

DwAW

W. Mockin

Cinnamon Billed Blue Hole

V. Phoebe

F.T. Phoebe

TK

Scal. Phoebe

G. Mockee

C. B. Gnat

W.T. Sparrow

~~L. P. + b.~~

Y.B. Eleonora at House

Y.B. Tannet

R.W. Swallow

B.J.f

S.B. Wren

W. Woodpecker

C. Catbird

B.G. Grt. Tch - at House

F. Gnat

L.P. Gnat

~~F. Gnat~~

T.C. Gnat

Ch. brent

B. napt

Kw 10

HW 10

Btw wthr 3

W.E.W 3+4

MW 10

Br. & L. Vbber

N. Wrenthroat 1

C. Yellowthroat

A. Redstart 10

Y. T. Onole

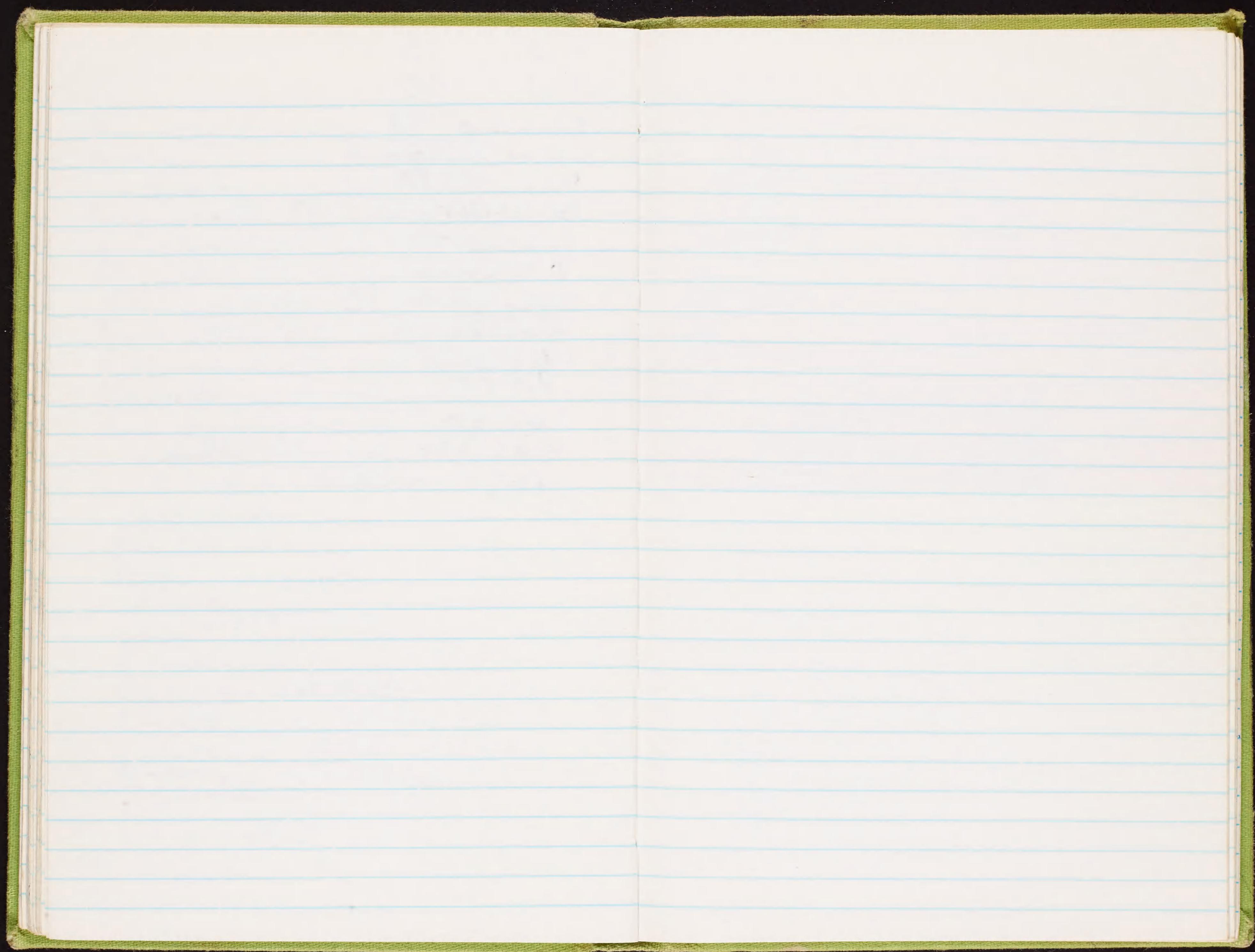
B.L. Onole

R.T. AT

R.C. AT

B.A. Sittaur

etc.



what I have receipts for:

Room + Board:

① Rockland }  
Frosty Lib., }  
Disney Boy }  
Hotel (various)  
Bus Limpio  
Dove Burger  
Hotel San Francisco  
Car rental Jimica  
" Belize }

what I don't have receipts for:

Gas  $\approx \$300$

Groceries

Restaurants (except Hotel (various))

Taxi

Airport taxes

Hotel El Condo - Belize City

~~6000~~ \$200

120 days Per Diem  
40  
=

\$4800  
900 car rental

\$5700  
3800  
1900

2300

120 days  
72  
per  
day  
\$200

and \$400 plane tickets

\$3400

1600

1900

2600

1041 in Belize

\$3010 in travel costs  
700

3710

I have

\$740 left -  
July 2nd ≈ \$150

\$900 + \$200

reimbursed

from our account

\$1100

3010  
700

3710

SAP

~~\$525~~  
 - CR  
 175 Dark Wiper  
 \$123.00 Gas  
 51.00 Food  
 51.00 Hotel  
 5.00 Phone calls  
 10.00 Taxi

~~~~~  
1010.00

Will pay

= but ~~\$20.00~~

~~\$10.00~~  
 4.00  
 7.00  
 10.00

\$31.00 more

\$1041.00 for trip to Belize

Car Rental = \$780 - 15%  
 - 105  
~~\$595~~ -

700  
 3.15  
~~105~~

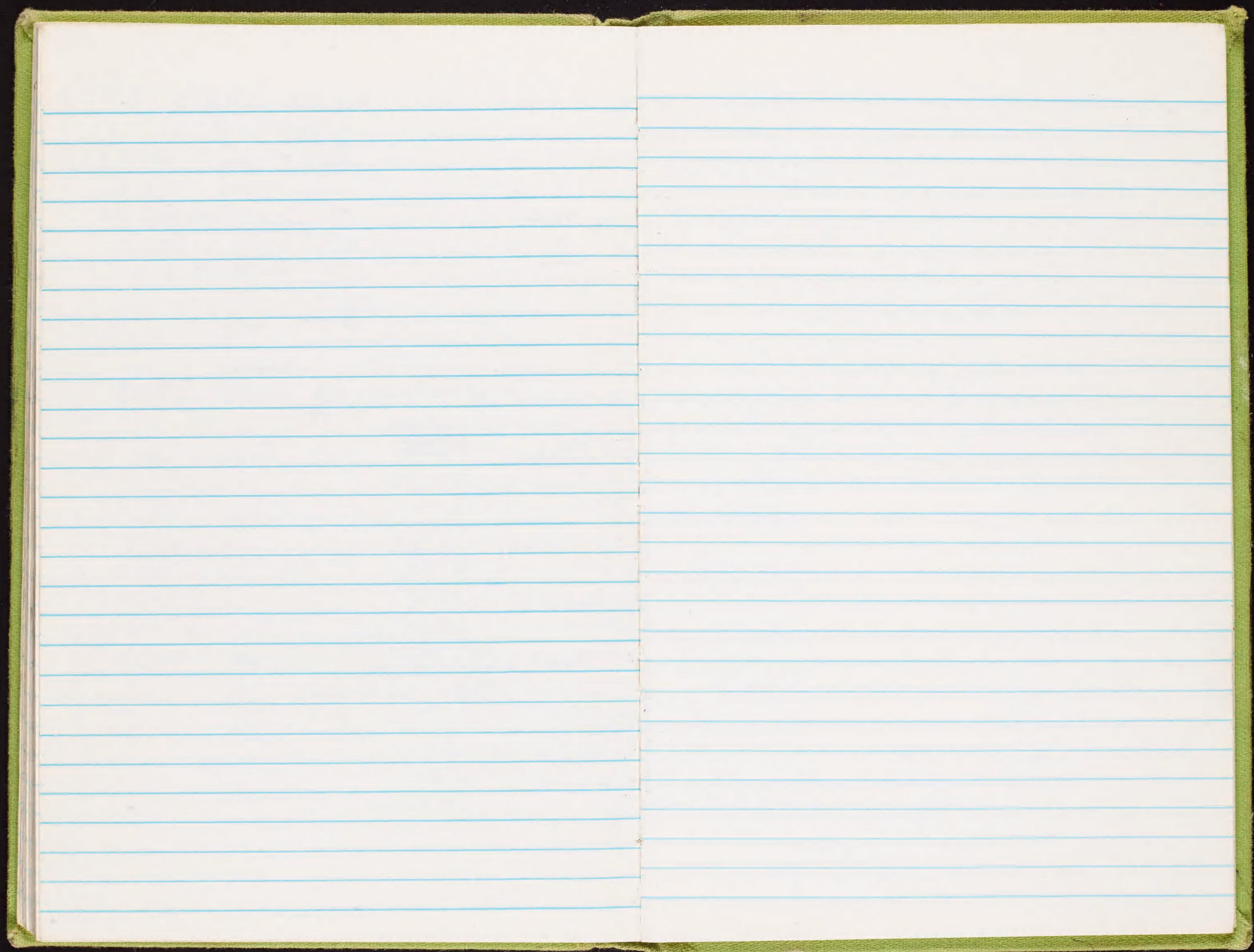
I paid \$75  
so I owe

~~\$25 up~~  
 I can refund  
~~37.00~~ 18 \$7.00

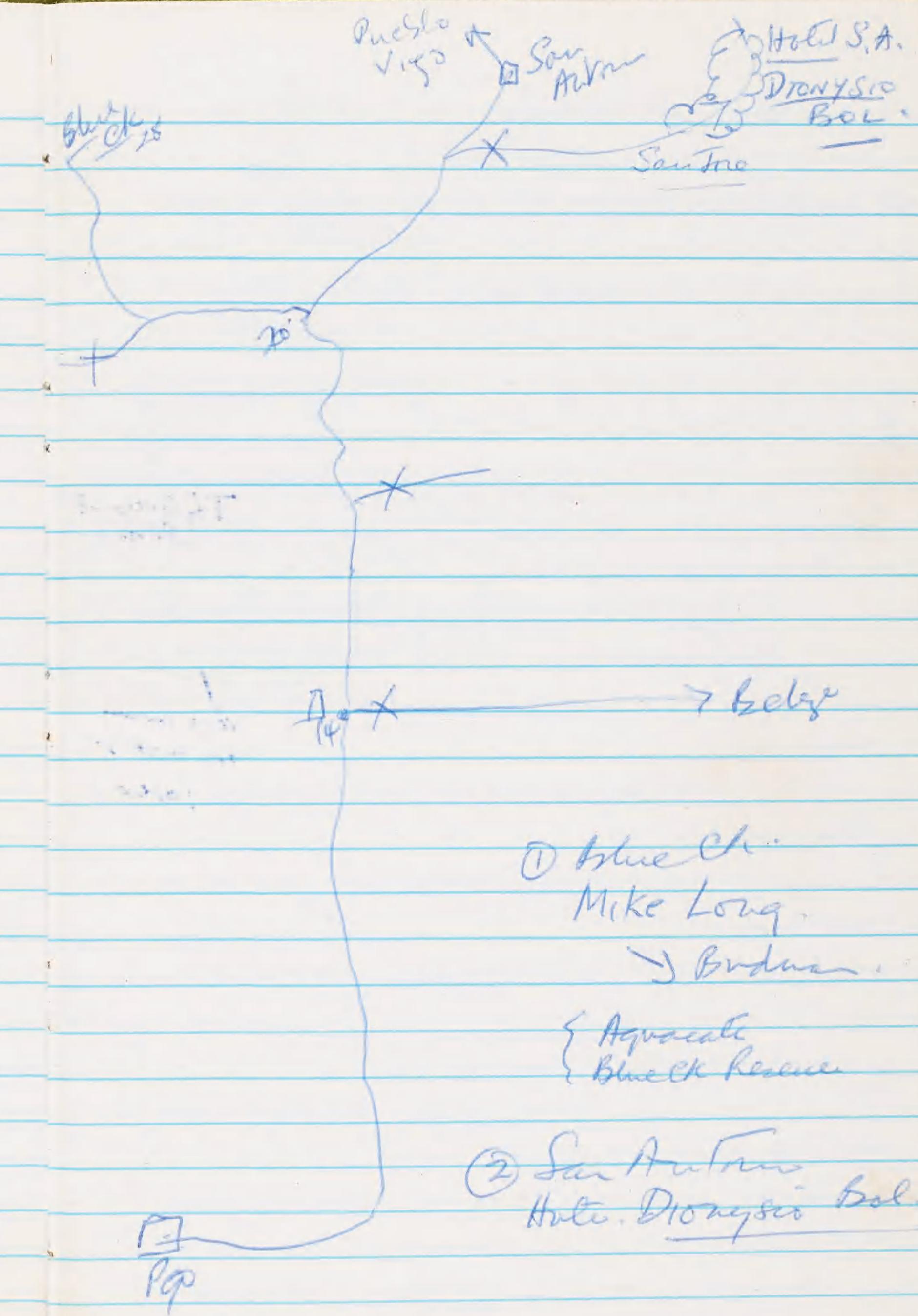
|       |                  |      |            |
|-------|------------------|------|------------|
| 6.00  | <del>15.00</del> | Food | 400        |
| 22.00 |                  |      | 300        |
| 20.00 |                  |      | 150        |
| 12.50 |                  |      | 600        |
| 16.00 |                  |      | 14.00      |
| 18.00 |                  |      | 20.00      |
| 20.00 |                  |      | \$2.50 sup |

Hotel: \$20 Belize  
 \$30 San Antonio  
 Taxi: 10.00

Phone calls: 4.00  
 1.00



Charlie Colvez  
Pasta Gordo



## Dendroctophilic foragers

Maryland - none

Jamaica - moderate visit. B. M. Vireo  
A. H. Warbler

Belize - Moderate - Two-billed Woodpecker (Plum)

4. Bicolored Puffin & Plm

Anttngel? T{ Great  
w. B. woodwren (Pitn)?

Spoonbill

Spot-breasted Wren

B.T foliage blower (rare)

more common  
in wetter  
forest

More data?

## Rank order habitat by

### Dendroctophilic abundance

1. <sup>wet</sup> limestone forest edge Jamaica - D.R.

Abundant

2. ~~Rooftops~~ forest Belize common  
BCI

3. <sup>wet</sup> ~~Rooftops~~ forest Belize - but  
top of Plm

4

5. Oak forest - Md - mod. +  
undesirable

6. <sup>④</sup> Montane forest Jamaica, D.R -  
Rare

Typical  
Live Leaf = 22 Dead Leaf = 96

spars 40%

Homop 27%

Orthop 18%

Leptofoliis 0?

\$ 64

Day composition - Humboldt

Live leaf N = 34 Dead leaf N = 89  
spars 75% 26%

Homopt 12

Orthopteran 3

Caterpillar - 5%

etc 10%

Bell Forest - so far

|           |     |      |   |
|-----------|-----|------|---|
| 5 cookies | 19  | 2    | = |
|           | 00  |      |   |
| 1.34      | .02 | 1.02 |   |

|                   |                 |   |      |
|-------------------|-----------------|---|------|
| vs                | 13              | 6 | 1.00 |
|                   |                 |   |      |
|                   | 350:1           |   |      |
| <del>\$15.1</del> | <del>15.1</del> |   |      |
| 36.1              | 15.1            |   |      |

|       |           |       |      |
|-------|-----------|-------|------|
| 5,000 | 44        | .08   | rate |
|       | 38.1      | 120:1 |      |
|       | 100% base |       |      |

|                 |    |   |  |
|-----------------|----|---|--|
| 1000            | 8  | 4 |  |
| itemized Hiking | 23 | 7 |  |

|    |   |  |  |
|----|---|--|--|
| 12 | 9 |  |  |
| 11 | 9 |  |  |
| 10 | 4 |  |  |
| 9  | 6 |  |  |
| 8  | 6 |  |  |
| 7  | 6 |  |  |

|        |    |    |  |
|--------|----|----|--|
| Locals | 11 | 2  |  |
| 2nd    | 21 | 12 |  |

|         |    |    |  |
|---------|----|----|--|
| Espouse | 16 | 12 |  |
|---------|----|----|--|

|    |    |  |
|----|----|--|
| 18 | 7  |  |
| 17 | 6  |  |
| 19 | 10 |  |
| 24 | 12 |  |

For trip South  
Lunch Food - chronic

~~bread~~  
~~sides~~  
~~oranges~~  
~~lunch~~

Map

car trailer check Bank

Cat Dennis Smith about car

Final Receipt 2/22

\$6.00 food

North

\$2 L-gas antif

\$2 foot Bologna

\$1.20 \$10 oranges

4 45 bread

2 95 phone rental + \$20 gas Bologna

\$50 male 54 phone bill

\$17.50 gas tank - Peoria \$31 fuel

Santa Fe -

\$8.00 dinner

\$16 gas

\$1 laundry

\$1.30 40 cokes

~~\$12.50~~ gas

2/23 →

\$2.75 lunch

\$10 - cord jewelry

\$75 Damages

David Rankin

350  
=

Phi

H

X

2nd

E

X

W.E.W. ~~|||||~~ ~~|||~~ ~~|||~~ ~~|||~~

30

True ~~100~~ ~~100~~ ~~100~~ + ~~100~~

Philom ~~100~~ ~~100~~ + ~~100~~

360 t.c.

5214-581-021

8512-124-304

↓

310

Check: Ta. I to Esperanza

Chetekak Light - By Falls - June

Heng Flower - Forestry

Austinine

Muchaca Forest station

(San Antonio)

Martin Meadows Hills Bank

Map in Belmopan

to Agard.

Maphredi Madrid:

turn right toward

